

Sub-plenary session at World Forest Week
19 March 2009, FAO Headquarters, Rome

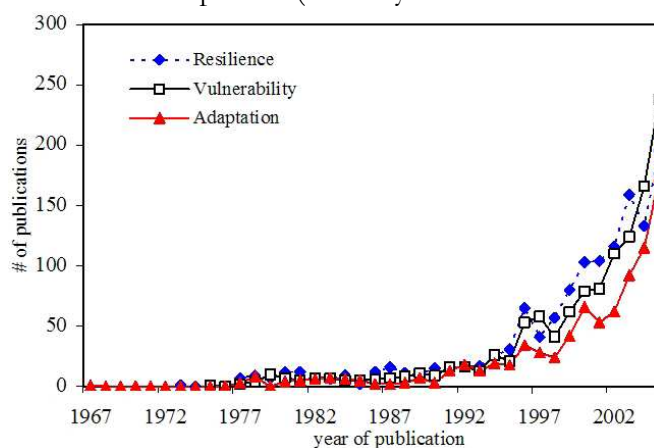
Tropical Forests for Adaptation to Climate Change

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Adaptation - a growing issue

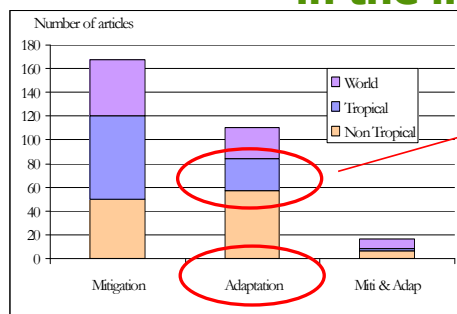
Publications on adaptation (not only related to forests and adaptation)



(Janssen, 2007)

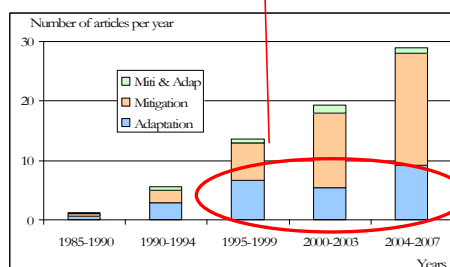


Forests and climate change in the literature



Less work on forests and adaptation, especially in the tropics

Adaptation and forests:
Not growing



Forest and climate change in 4 journals

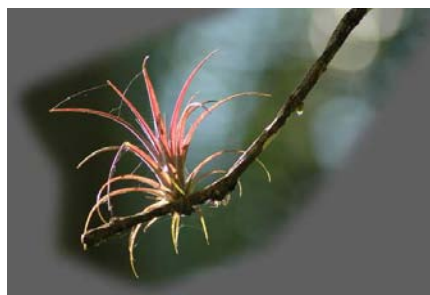
- Global Environmental Change
 - Climatic Change
 - Climate Policy
 - Mitigation and Adaptation Strategies for Climate Change
- 296 articles



Forests and Adaptation

• Adaptation for forests

- Impacts of climate change on forests
- How to adapt forests and forest management?

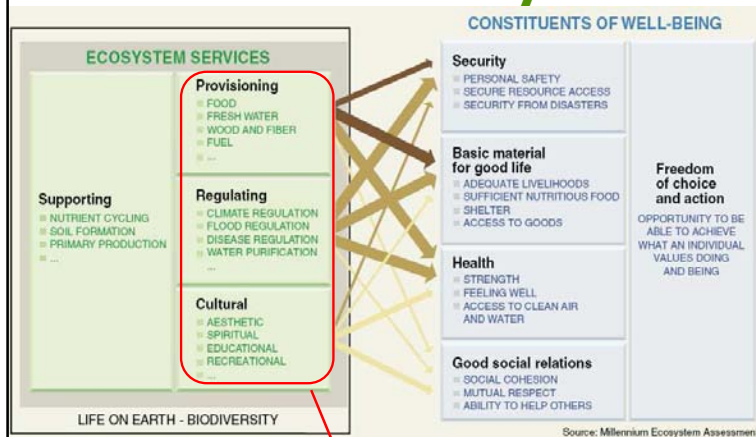


• Forests for adaptation (= Forest-based for adaptation)

- This presentation



Forests = Providers of ecosystem services



Direct benefits to societies



Socioeconomic sectors vulnerable to climate change (according to the IPCC)

Ecosystem services	Vulnerable sectors [†]					
	Freshwater resources	Ecosystems [‡]	Food, fibre and forest products	Coastal systems and lowlying areas	Industry, settlement and societies	Health
Provisioning						
- Food			X		X	X
- Wood, fuel wood, other fibres			X		X	
- Biochemicals and genetic resources			X		X	X
Regulating						
- Moderation of floods, landslides, soil erosion, force of wave and wind	X	X	X	X	X	X
- Water purification, decomposition of wastes, control of diseases	X	X	X		X	X
- Moderation of drought and temperature extremes	X	X	X		X	X
- Pollination of crops and natural ecosystems, control of agricultural pests, dispersal of seeds		X	X			X
- Regulation of global climate	X	X	X	X	X	X
Cultural					X	X

They all depend on ecosystem services

(Locatelli et al. 2008)



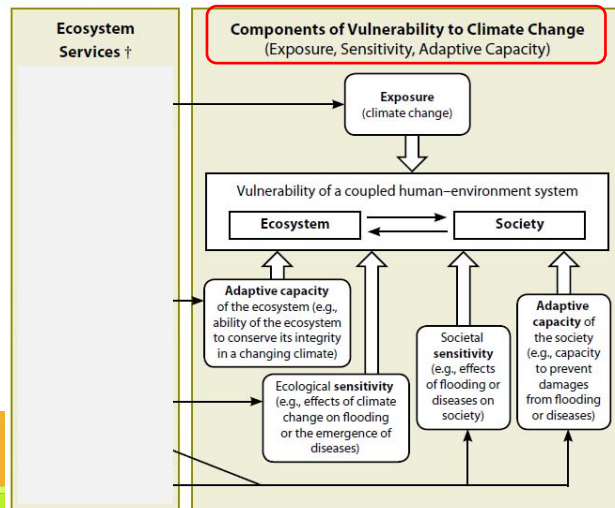
[†] According to IPCC (Parry et al. 2007).
[‡] Ecosystems outside the forests providing services.
[§] Energy, transportation, tourism, insurance, etc.

Vulnerability and ecosystem services

Vulnerability:

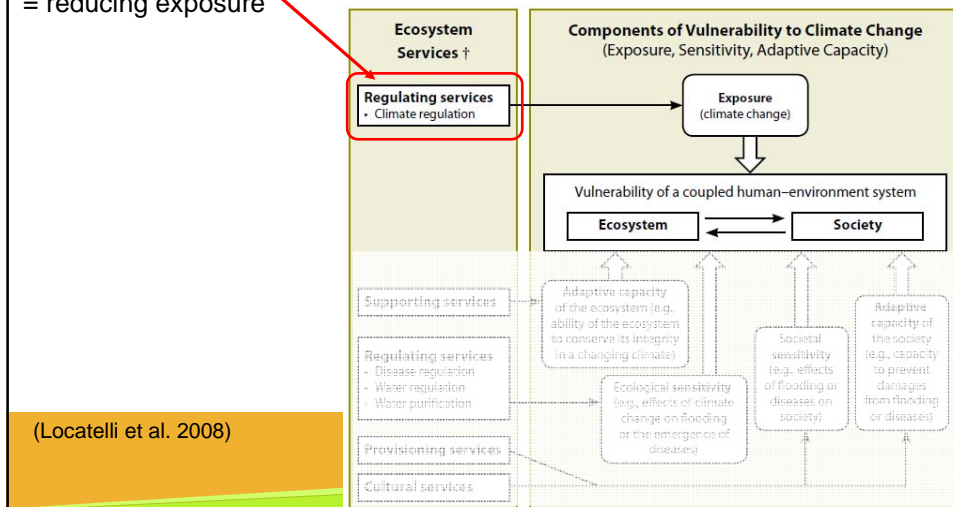
- Exposure
 - climate change
- Sensitivity
 - ecosystems/society
- Adaptive capacity
 - ecosystems/society

(Locatelli et al. 2008)



Forest ecosystem services and vulnerability

Regulating services – e.g. role of forests in the hydrological cycle
= reducing exposure



(Locatelli et al. 2008)

Forest ecosystem services and vulnerability

Forest ecosystem services = reducing the vulnerability of society

Examples:

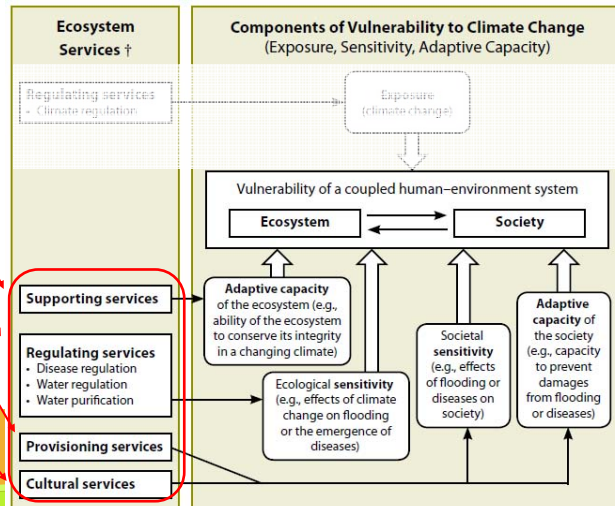
Habitat provision for reducing species vulnerability

Watershed protection for reducing landslides

NTFPs as safety nets for local communities

Strengthening social cohesion, important for adaptation

(Locatelli et al. 2008)



Example 1: Cameroon (1/2)

- CoFCCA project (Congo Basin Forests and Climate Change Adaptation) in Cameroon, DRC, CAR
 - Participatory Action Research with communities in the forest-savanna transition zone
- Communities analyzing their vulnerability to climatic variability:
 - Agriculture and livestock activities = very sensitive
 - NTFP (non timber forest products) = less sensitive = safety net



Example 1: Cameroon (2/2)

- What do communities propose for adaptation?
 - Technical options for agriculture and livestock
 - Crop selection, livestock management
 - Management options for forests and NTFPs
 - Access, control, marketing... with measures at provincial or national level
 - As a way to reduce their vulnerability



Example 2: Costa Rica (1/2)

- TroFCCA project (Tropical Forests and Climate Change Adaptation) in 8 countries of Asia, West Africa, and Central America
 - Vulnerability of forests and forest-dependent sectors
 - Central America: emphasis on drinking water and hydropower
- Hydroelectric companies analyzing their vulnerability:
 - Trends: increasing intensity of precipitation
 - Siltation in dams: very high costs
 - Importance of upstream soil conservation is increasing



Example 2: Costa Rica (2/2)

- Proposals for adaptation:
 - Better watershed management linked with forest management
 - Payment for Ecosystem Services
 - Forest conservation
 - Forest restoration
 - Soil conservation in agriculture and agroforestry



Lessons learnt

- Need to include ecosystem services in adaptation
 - Often more effective, efficient, and sustainable than infrastructure or technological options of adaptation
- Need to link scales
 - upstream/downstream
 - communities/provinces/countries
- Use innovative mechanisms for financing
 - Payment for ecosystem services



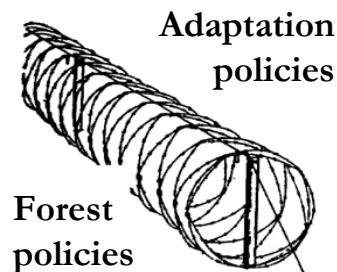
Ecosystem-Based Adaptation: a tentative definition

- EBA: Adaptation measures or policies that harness ecosystem services for adapting society to climate change
- EBA considers:
 - The vulnerability of ecosystems (to land-use change, over-harvesting, climate change, etc.).
 - The links between ecosystem services and societal vulnerability
 - The need to involve stakeholders and decision makers beyond the forestry sector in managing or protecting forest ecosystem services
- EBA is necessarily:
 - Multi sectoral (forest managers + forest communities + sectors beyond the forest sector)
 - Multi scale (local, meso/watershed, national, regional, international)



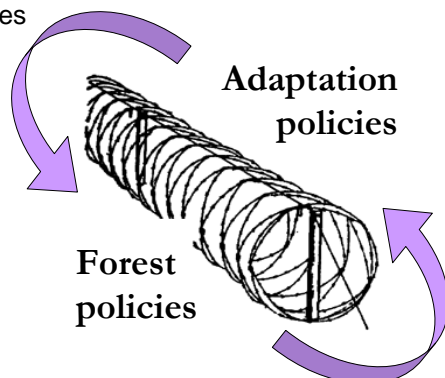
Policies for Ecosystem-Based Adaptation

Ecosystem-Based Adaptation =
Bridging Forest and Adaptation Policy arenas



Policies for Ecosystem-Based Adaptation

Mainstreaming adaptation into forest policies

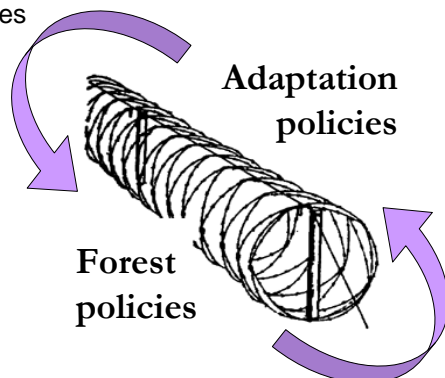


Mainstreaming forests into adaptation policies



Policies for Ecosystem-Based Adaptation

Mainstreaming adaptation into forest policies

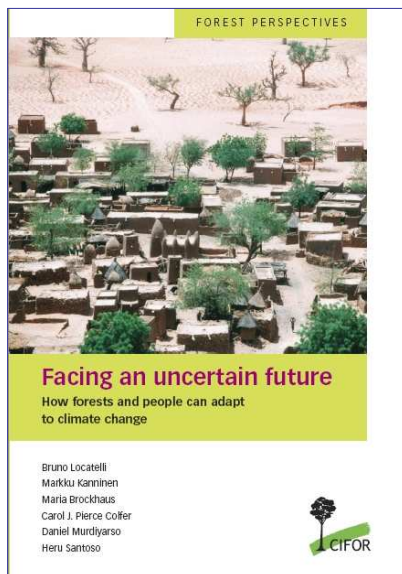


Bringing adaptation into the forest arena:
• Adaptation in nfp's

Bringing forests into the adaptation arena:
• Forests in NAPA's
• Adaptation Fund etc. financing schemes

Mainstreaming forests into adaptation policies





**Thank you for
your attention**

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